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## HEPATITIS C

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***Clinical Features:*** Initial infection may be asymptomatic or mild (<90% of cases), chronic infection is common (55% to 85% of cases). Approximately 70% of the chronically infected will develop chronic liver disease, cirrhosis or hepatocellular carcinoma. Liver function tests may be elevated or normal during chronic disease.

***Causative Agent:*** The hepatitis C virus is an enveloped RNA virus in the Flaviviridae family.

***Mode of Transmission:*** Primarily as a bloodborne pathogen (e.g. sharing of contaminated objects especially needles and syringes) - transmission through sexual contact may also occur, although this is rare.

***Incubation Period:*** The incubation period ranges from 2 weeks to 6 months, averaging 6-9 weeks. Acute hepatitis C infection will convert to a chronic carrier state within 6 months if the acute infection does not resolve. Chronic infection may persist for 10 to 20 years prior to onset of symptoms.

***Period of Communicability:*** Communicability persists as long as virus is present in the body. Chronic cases are considered infectious for life. Peaks in virus concentration correlate with peaks in ALT activity.

***Public Health Significance:*** Preventative measures for hepatitis C include behavior modifications that also lower risk factors for acquiring other diseases, such as HIV. While no vaccine exists for hepatitis C, vaccination against hepatitis A and B are recommended for infected individuals.

***Reportable Disease in Kansas Since:*** 2000

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## ACUTE HEPATITIS C

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### *Laboratory Criteria for Surveillance Purposes*

- Serum alanine aminotransferase levels greater than 7 times the upper limit of normal, and IgM antibody to hepatitis A virus (IgM anti-HAV) negative (if done), **AND**
- IgM antibody to hepatitis B core antigen (IgM anti-HBc) negative, or if not done, hepatitis B surface antigen (HBsAg) negative, **AND**
  - Antibody to hepatitis C virus (anti-HCV) screening-test-positive (repeat reactive) verified by an additional more specific assay (e.g. recombinant immunoblot assay [RIBA] for anti-HCV or nucleic acid testing for hepatitis C virus [HCV] RNA), **OR**
  - Anti-HCV screening-test-positive with a signal to cut-off ratio predictive of a true positive as determined for the particular assay (e.g.,  $\geq 3.8$  for the enzyme immunoassays)

### *Surveillance Case Definitions*

*Confirmed:* A case that meets the clinical case definition and is laboratory confirmed

**2005 Kansas Count: 3**

	<i>Rate per 100,000</i>	<i>95% CI</i>
Kansas Rate	0.1	(0.0 - 0.2)
U.S. Rate (2004)	0.3	NA

Three acute cases of hepatitis C were reported in 2005. These are the first confirmed cases recorded in Kansas since 2002, when five cases were reported. The true incidence rate is likely higher; the strict surveillance case definition precludes some cases from classified as “confirmed”. Six cases were classified as “probable” in 2005.

## **CHRONIC HEPATITIS C**

### ***Laboratory Criteria for Surveillance Purposes***

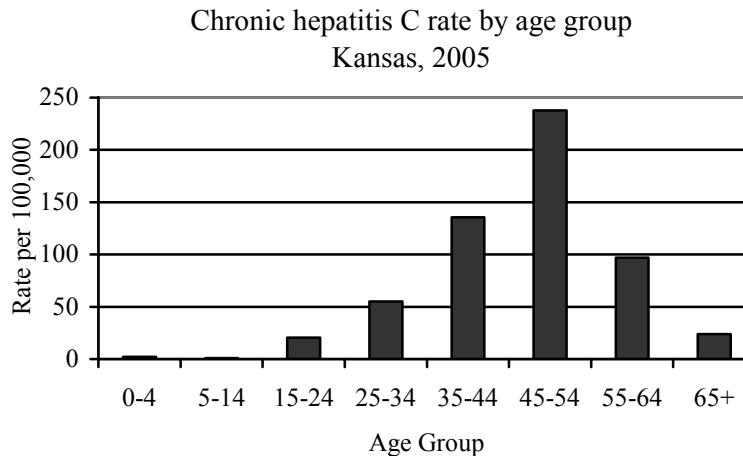
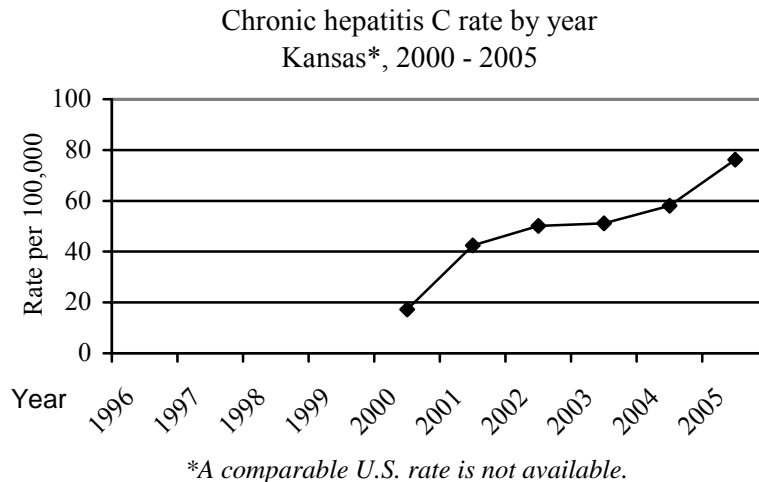
- Anti-HCV positive by EIA, verified by an additional specific assay (e.g. RIBA for anti-HCV or nucleic acid testing (PCR) for HCV RNA, **OR**
- HCV RIBA positive, **OR**
- Nucleic acid test (PCR) for HCV RNA positive, **OR**
- Report of HCV genotype, **OR**
- Anti-HCV positive screening with a signal to cut-off ratio  $\geq 3.8$  (KDHE laboratory) and  $\geq 3.0$  (Private laboratory).

### ***Surveillance Case Definitions***

*Confirmed:* A case that is laboratory confirmed and that does not meet the case definition for acute hepatitis C.

**2005 Kansas Count: 2085**

	<i>Rate per 100,000</i>	<i>95% CI</i>
Kansas Rate	76.2	(72.9 - 79.5)
U.S. Rate (2004)	NA	NA
<b><i>Gender</i></b>		
Male	96.6	(91.6 - 102.1)
Female	55.5	(51.5 - 59.4)
<b><i>Race</i></b>		
White	30.5	(28.3 - 32.2)
Black	66.3	(54.2 - 78.4)
Asian/Pacific Islander	20.8	(9.5 - 32.2)
Native American	52.0	(26.5 - 77.5)
<b><i>Ethnicity</i></b>		
Hispanic	32.2	(24.7 - 39.7)
Non-Hispanic	25.1	(23.2 - 27.1)
<b><i>Geographic area</i></b>		
Urban County	85.7	(80.8 - 90.5)
Non-Urban County	66.4	(62.1 - 70.8)



In 2005, 2085 chronic hepatitis C cases were reported - a 25% increase when compared with 2004. The three-year median for 2002-2004 was 1387 cases. Reports of chronic hepatitis C have steadily increased since the disease became reportable in 2000; this may be due to increasing awareness and availability of testing, or due to improvement in the reporting of cases to KDHE.

The ages of reported, chronic HCV cases ranged from less than 1 to 97 years of age (48.5 years median age). Hepatitis C was reported in all age groups, but 1,457 (69%) of all cases occurred in the 35-44 (525 cases) and 45-54 (932 cases) age categories. Cases in these two age categories may represent prior unreported infections. Alternatively, chronic HCV is often asymptomatic; persons in these two age categories may have been infected 10 to 20 years prior to positive-HCV confirmation.

The ratio of males to females was 1.7:1. Cases from the urban counties—Douglas, Johnson, Sedgwick, Shawnee, and Wyandotte—represented 57% of all cases reported. Of the 2005 cases, 753 (36%) were White, 115 (6%) were African-American, 13 (1%)

were Asian/Pacific Islanders, and 16 (1%) were Native American. Race was not reported for 1188 (43%) of the cases. Hispanic ethnicity accounted for 71 (3%) of the cases, although ethnicity was not reported in 1,382 (66%) of the cases. Improved collection of race and ethnicity information is needed to more definitively describe the burden of chronic HCV prevalence.